



Patent
270/234

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Yoshihiro Takai et al.

Serial No.: 10/037,477

Filed: January 2, 2002

For: METHOD AND APPARATUS FOR
IRRADIATING A TARGET

Group Art Unit: 2882

Examiner: Not Yet Assigned

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TECHNOLOGY CENTER 3700

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

In accordance with 37 CFR §§ 1.97 and 1.98, the items identified in this Information Disclosure Statement ("IDS") are brought to the attention of the Office. The items are listed on the attached form PTO-1449 and copies are enclosed for the convenience of the Examiner.

The items identified in this IDS may or may not be "material" pursuant to 37 CFR § 1.56. The submission thereof by Applicant is not to be construed as an admission that any such patent, publication or other information referred to therein is material or considered to be material (37 CFR § 1.97(h)), or even qualifies as "prior art" under 35 USC § 102 with respect to this invention unless specifically designated by Applicant as such.

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August 02, 2002
Date of Deposit

Angelica Jaquez
Name of Person Mailing Paper

Signature of Person Mailing Paper



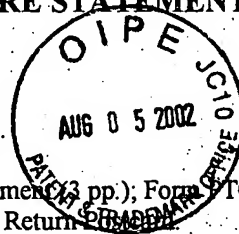
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Applicant: Yoshihiro Takai et al.
Serial No.: 10/037,477
For: METHOD AND APPARATUS FOR IRRADIATING A
TARGET
Filed: January 2, 2002.

INFORMATION DISCLOSURE STATEMENT

Attorney(s): Ziyue J. Zhou
Docket No.: 270/234
Client Name: Varian Medical Systems, Inc.
Date of Deposit: August 2, 2002
Enclosure(s): Information Disclosure Statement (3 pp.); Form PTO-1449 (1 p.); References AA-AH; and Return Envelope



INFORMATION DISCLOSURE STATEMENT FILING PROVISION:

☒ This IDS is believed to be timely in that it is being submitted under 37 CFR § 1.97(b), that is (1) within three months of the filing date of the application, which is not a continued prosecution application filed under § 1.53(d); or (2) within three months of entry of the national stage as set forth in 37 CFR § 1.491; or (3) before the mailing of a first Office action on the merits; or (4) before the mailing of a first Office action after filing a request for continued examination under § 1.114. Thus, no fee is required.

☒ However, if the undersigned is in error in this regard, Applicant respectfully requests that the Office consider this IDS as filed under 37 CFR § 1.97(c), if applicable, and charge the fee due under 37 CFR § 1.17(p) to the deposit account referenced below.

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☐ This IDS is being submitted under 37 CFR § 1.97(c), that is after mailing of a first Office action on the merits, but before a Final Action under 37 CFR § 1.113 or a Notice of Allowance under 37 CFR § 1.311.

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STATEMENT UNDER 37 CFR § 1.97(e):

☐ Each item contained in this IDS was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS.

☒ No item contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this statement after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 CFR § 1.56(c) more than three months prior to the filing of this IDS.

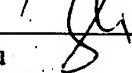
PAYMENT AND/OR AUTHORIZATION TO CHARGE FEES:

- ☐ A check in the amount of _____ is enclosed for the above fee(s).
- ☐ Please charge _____ to Deposit Account No. **12-2475** for the above fee(s).

The Commissioner is authorized to charge any fees required by the filing of these papers, and to credit any overpayment to Lyon & Lyon's Deposit Account No. **12-2475**.

Respectfully submitted,
LYON & LYON LLP

Dated: August 2, 2002

By: 
Ziye J. Zhou
Reg. No. 41,423



22249

LYON & LYON LLP
633 W. Fifth Street, Suite 4700
Los Angeles, CA 90071

LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S
INFORMATION DISCLOSURE STATEMENT

APPLICANT:

Yoshihiro Takai et al.

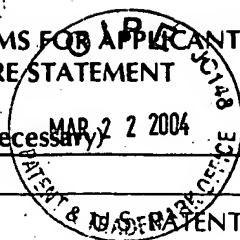
FILING DATE:

January 2, 2002

GROUP:

2882

(Use several sheets if necessary)



PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	AA	5,727,554	03/17/98	Kalend et al.	128	653.1	09/19/96
	AB	5,823,192	10/20/98	Kalend et al.	128	845	07/31/96
	AC	6,020,159	02/01/00	Black et al.	435	69.1	08/04/97
	AD	6,138,302	10/31/00	Sashin et al.	5	600	11/10/98
	AE	6,307,914 B1	10/23/01	Kunieda et al.	378	65	12/01/99

FOREIGN PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION	
							YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)		
	AF	B.J. Lopresti, et al., "Implementation and Performance of an Optical Motion Tracking System for High Resolution Brain PET Imaging", <i>IEEE Transactions on Nuclear Science</i> , Vol. 46, No. 6, December 1999; pp. 2059-2067
	AG	P.J. Keall, et al., "Motion adaptive x-ray therapy: a feasibility study", <i>Physics in Medicine Biology</i> , 46 (2001) 1-10
	AH	Paul Keall, "4D IMRT: Imaging, Planning and Delivery", January 31, 2001, pp. 1-53

EXAMINER:

Not Yet Assigned

DATE CONSIDERED:

EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to applicant



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Applicant: Yoshihiro Takai et al.
Serial No.: 10/037,477
For: METHOD AND APPARATUS FOR IRRADIATING A
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Filed: January 2, 2002

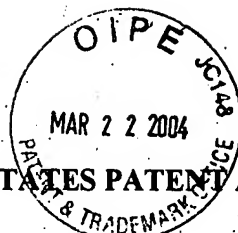
SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Attorney(s): Peter C. Mei
Docket No.: 270/234
Client Name: Varian Medical Systems, Inc.
Date of Deposit: August 27, 2002
Enclosure(s): Supplemental Information Disclosure Statement (2 pp.); PTO-
1449 (1 p.); References AA-AK; and Return Postcard.

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Patent
270/234

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Group Art Unit: 2882

Examiner: Not Yet Assigned

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Washington, D.C. 20231

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August 27, 2002
Date of Deposit

Angelica Jaquez
Name of Person Mailing Paper

Signature of Person Mailing Paper

- ☒ However, if the undersigned is in error in this regard, Applicant respectfully requests that the Office consider this IDS as filed under 37 CFR § 1.97(c), if applicable, and charge the fee due under 37 CFR § 1.17(p) to the deposit account referenced below.
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STATEMENT UNDER 37 CFR § 1.97(e):

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PAYMENT AND/OR AUTHORIZATION TO CHARGE FEES:

The Commissioner is authorized to charge any fees required by the filing of these papers, and to credit any overpayment to Lyon & Lyon's Deposit Account No. 12-2475.

Respectfully submitted,
LYON & LYON LLP

Dated: August 27, 2002

By: _____

Ziye J. Zhou
Reg. No. 41,423



22249

LYON & LYON LLP
633 W. Fifth Street, Suite 4700
Los Angeles, CA 90071

FORM PTO-1449 LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY. DOC. NO. 270/234	SERIAL NO. 10/037,477
	APPLICANT: Yoshihiro Takai et al.	
	FILING DATE: January 2, 2002	GROUP: 2882

U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	AA	5,207,223	5/4/93	Adler	128	653.1	10/19/90
	AB	5,427,097	6/27/95	Depp	128	653.1	12/10/92
	AC	6,144,875	11/7/00	Schweikard et al.	600	427	3/16/99
	AD	6,222,901	4/24/01	Meulenbrugge et al.	378	19	3/12/99

FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES NO

		OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)
	AE	Yonesaka A. et al., "Application of real-time tracking radiation therapy (RTRT) system for the treatment of spinal and paraspinal diseases"; <i>J. Radiat Oncol. Biol. Phys.</i> , 2001; 51 (3S1): Abstract No. 44., PMID: 14; 2 pp.
	AF	Jolesz, Ferenc A., M.D., "IMAGE-GUIDED PROCEDURES AND THE OPERATING ROOM OF THE FUTURE"; <i>Brigham and Women's Hospital, Harvard Medical School</i> , pp. 1-23.
	AG	Shimizu, S., et al., "Fluoroscopic Real-Time Tumor-Tracking Radiation Treatment (RTRT) Can Reduce Internal Margin (IM) and Set-up Margin (SM) of Planning Target Volume (PTV) for Lung Tumors; 2 pp.
	AH	Kitamura, K., et al., "Migration of the Internal Fiducial Gold Marker Implanted into Prostate and Liver treated with Real-Time Tumor-Tracking Radiation Treatment (RTRT)", <i>Hokkaido University School of Medicine, Sapporo, Japan</i> ; 2 pp.
	AI	Kitamura, Kei et al.; "3D INTRA-FRACTIONAL MOVEMENT OF PROSTATE MEASURED DURING REAL-TIME TUMOR TRACKING RADIATION THERAPY [RTRT] IN SUPINE AND PRONE TREATMENT POSITIONS"; <i>Department of Radiology and Urology, Hokkaido University School of Medicine</i> ; 15 pp.
	AJ	Fujita K., "Three-dimensional conformal set-up of prostate cancer by adjustment of actual clinical target volume (CTV) to virtual CTV using three fiducial markers and fluoroscopic real-time tracking system.", <i>J. Radiat. Oncol. Biol. Phys.</i> , 2001; 51 (3S1): Abstract No. 2303, PMID: 16; 2 pp
	AK	Benedict, Stanley H., "Looking Into Patient Positioning and Organ Motion", <i>VCU Health System</i> , pp. 1-10.

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EXAMINER: Not Yet Assigned	DATE CONSIDERED:
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Date Mailed

March 4, 2003

Due Date: *N/A*

Atty. Docket

270/234; 18721-7053
(PCM:ct)

Applicant(s):

Title:

Yoshihiro Takai et al.

METHOD AND APPARATUS FOR IRRADIATING A TARGET

Serial No.:

10037,477

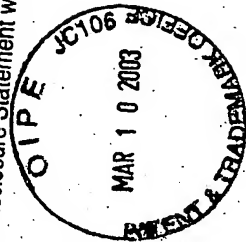
Filing Date:

January 2, 2002

Commissioner for Patents
Washington, DC 20231

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1. Second Supplemental Information Disclosure Statement with Certificate of Mailing (3 pages)
2. Forms PTO/SB/08A&B (2 pages)
3. Cited References (20)
4. Return Receipt Postcard



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Date of Deposit: <u>3/4/03</u> MAR 2 2 2004	Signature of Person Certifying: <u>Carolyn Tobias</u> Printed Name: Carolyn Tobias

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Yoshihiro Takai et al.

Serial No.: 10/037,477

Filed: January 2, 2002

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Group Art Unit: 2882

Examiner: Not yet assigned

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SECOND SUPPLEMENTAL
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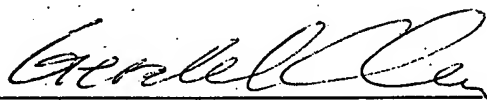
PAYMENT AND/OR AUTHORIZATION TO CHARGE FEES:

- ☐ A check in the amount of _____ is enclosed for the above fee(s).
- ☒ The Commissioner is authorized to credit any overpayment and to charge any underpayment to Bingham McCutchen's Deposit Account No. 50-2518, referencing billing No. 18721-7053, for any fees required by the filing of these papers.

Respectfully submitted,

Dated: 3/4/03

By:


Gerald Chan
Reg. No. 51,541

BINGHAM McCUTCHEN LLP
Three Embarcadero, Suite 1800
San Francisco, CA 94111-4067
Telephone: (650) 849-4904
Telefax: (650) 849-4800

Complete if Known

Substitute for form 1449A-PTO

SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

2

Application Number

10/037,477

Filing Date

January 2, 2002

First Named Inventor

Yoshihiro Takai

Art Unit

2882

Examiner Name

Not yet assigned

Attorney Docket No.

270/234; 18721-7053

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher city and/or country where published
	1	Balter, J. M. et al., "Daily targeting of intrahepatic tumors for radiotherapy," <i>Int J Radiat Oncol Biol Phys</i> , 2002, Jan 1:52(1), pp. 266-71
	2	Cho, P.S. et al. "Cone-beam CT for radiotherapy applications," <i>Phys Med Biol</i> 1995;40: pp. 1863-1883.
	3	Drake, D.G. et al. "Characterization of a fluoroscopic imaging system for kilovoltage and megavoltage radiography," <i>Med Phys</i> 2000;27: pp. 898-905.
	4	Fahrig, R. et al., "Three-dimensional computed tomographic reconstruction using a C-arm mounted XR11: Imagebased correction of gantry motion non-idealities," <i>Med Phys</i> 2000;27:30-38.
	5	Feldkamp, L.A. et al. "Practical cone-beam algorithm," <i>J Opt Soc Am A</i> 1984;1: pp. 612-619.
	6	Groh, B.A. et al. "A performance comparison of flat-panel imager-based MV and kV conebeam CT," <i>Med Phys</i> 2002;29: pp. 967-975.
	7	Jaffray, D.A. et al. "A radiographic and tomographic imaging system integrated into a medical linear accelerator for localization of bone and soft-tissue targets," <i>Int J Radiat Oncol Biol Phys</i> 1999;45: pp. 773-789.
	8	Jaffray, D.A. et al. "Cone-beam computed tomography with a flat-panel imager: Initial performance characterization," <i>Med Phys</i> 2000;27: pp.1311-23.
	9	Keall, P. J. et al., "[Abstract] Motion Adaptive X-ray Therapy: A feasibility study," <i>3rd Annual IMRT Symposium ABSTRACTS</i> , Chicago 2000 World Congress, July 24, 2000, Sheraton Chicago, Chicago, Illinois.
	10	Keall, P. J. et al., "[Presentation] Motion Adaptive X-Ray Therapy; A Feasibility Study," Medical College of Virginia Hospitals, Virginia Commonwealth University.
	11	Midgley, S., et al. "A feasibility study for megavoltage cone beam CT using commercial EPID," <i>Phys Med Biol</i> 1998;43: pp. 155-169.

Examiner's
SignatureDate
Considered

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANTS

(use as many sheets as necessary)

Sheet 2 of 2

Application Number	10/037,477
Filing Date	January 2, 2002
First Named Inventor	Yoshihiro Takai
Art Unit	2882
Examiner Name	Not yet assigned
Attorney Docket No.	270/234; 18721-7053

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

12	Mosleh-Shirazi, M.A. et al. "A cone-beam megavoltage CT scanner for treatment verification in conformal radiotherapy," <i>Radiother Oncol</i> 1998; 48: pp. 319–328.
13	Nakagawa, K. et al. "Megavoltage CT-assisted stereotactic radiosurgery for thoracic tumors: Original research in the treatment of thoracic neoplasms," <i>Int J Radiat Oncol Biol Phys</i> 2000; pp. 48:449–457.
14	Pisani, L. et al. "Setup error in radiotherapy: On-line correction using electronic kilovoltage and megavoltage radiographs," <i>Int J Radiat Oncol Biol Phys</i> 2000; 47: pp. 825–839.
15	Ruchala, K.J. et al. "Megavoltage CT on a tomotherapy system," <i>Phys Med Biol</i> 1999; 44: pp. 2597–2621.
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* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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Atty. Docket 270/234; 18721-7053
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Applicant(s): Yoshihiro Takai, et al.

Title: METHOD AND APPARATUS FOR IRRADIATING A TARGET

Serial No.: 10/037,477

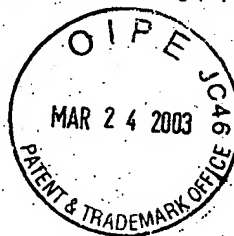
Filing Date: January 2, 2002

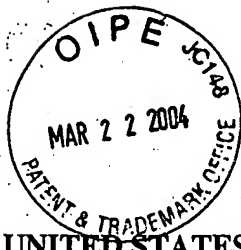
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Patent
270/234
18721-7053

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Yoshihiro Takai, et al.

Serial No.: 10/037,477

Filed: January 2, 2002

For: METHOD AND APPARATUS FOR
IRRADIATING A TARGET

Group Art Unit: 2882

Examiner: Not-Yet-Assigned

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

In accordance with 37 CFR § 1.97 and 1.98, and , the items identified in this Information Disclosure Statement ("IDS") are brought to the attention of the Office. The items are listed on the attached form PTO/SB/08A (08-00). Copies of items 4 and 6 are enclosed for the convenience of the Examiner. Other references (items 1-3, 5, 7-8) are not enclosed since each item was submitted or cited in a parent application (Serial No. 09/178,383).

The items identified in this IDS may or may not be "material" pursuant to 37 CFR § 1.56. The submission thereof by Applicant is not to be construed as an admission that any such patent, publication or other information referred to therein is material or considered to be material (37 CFR § 1.97(h)), or even qualifies as "prior art" under 35 USC § 102 with respect to this invention unless specifically designated by Applicant as such.

CERTIFICATE OF MAILING TRANSMISSION
(37 C.F.R. §1.8)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposit with the United States Postal Services on the date shown below with sufficient postage as "First Class Mail" to addressee in an envelope addressed to the Commissioner for Patents, Washington, D.C. 202031

3/17/03
Date of deposit

Carolyn Tobias

Name of Person transmitting Paper

Carolyn Tobias
Signature of Person depositing Paper

INFORMATION DISCLOSURE STATEMENT FILING PROVISION:

- ☒ This IDS is believed to be timely in that it is being submitted under 37 CFR § 1.97(b), that is (1) within three months of the filing date of the application, which is not a continued prosecution application filed under § 1.53(d) or (2) within three months of entry of the national stage as set forth in 37 CFR § 1.491; or (3) before the mailing of a first Office action on the merits; or (4) before the mailing of a first Office action after filing a request for continued examination under § 1.114. Thus, no fee is required.
- ☒ However, if the undersigned is in error in this regard, Applicant respectfully requests that the Office consider this IDS as filed under 37 CFR § 1.97(c), if applicable, and charge the fee due under 37 CFR § 1.17(p) to the deposit account referenced below.
- ☐ However, if the undersigned is in error in this regard, Applicant respectfully requests that the Office consider this IDS as filed under 37 CFR § 1.97(c), if applicable, and a statement under 37 CFR § 1.97(e) is included below, thus no fee is required.
- ☐ This IDS is being submitted under 37 CFR § 1.97(c), that is after mailing of a first Office action on the merits, but before a Final Action under 37 CFR § 1.113 or a Notice of Allowance under 37 CFR § 1.311.
- ☐ The fee due under 37 CFR § 1.17(p) is submitted herewith.
- ☐ A statement under 37 CFR § 1.97(e) is included below, thus no fee is required. In the event that this IDS is not received before a Final Action or a Notice of Allowance, then Applicant respectfully requests that the Office consider the filing of these papers to be submitted under 37 CFR § 1.97(d) and charge the fee due under 37 CFR § 1.17(p) to the deposit account below.
- ☐ This IDS is being submitted under 37 CFR § 1.97(d), that is after a Final Action under 37 CFR § 1.113 or a Notice of Allowance under 37 CFR § 1.311, but before payment of the issue fee. A statement under 37 CFR § 1.97(e) is included below. The fee due under 37 CFR § 1.17(p) is submitted herewith.
- ☐ This IDS is being submitted under 37 CFR § 1.97(i); this IDS does not comply with either 37 CFR § 1.97 or § 1.98. Therefore it is requested to be placed in the file but not considered by the Patent Office. A statement under 37 CFR § 1.97(e) is included below.

STATEMENT UNDER 37 CFR § 1.97(e):

- ☐ Each item contained in this IDS was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS.
- ☐ No item contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this statement after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 CFR § 1.56(c) more than three months prior to the filing of this IDS.

PAYMENT AND/OR AUTHORIZATION TO CHARGE FEES:

- ☐ A check in the amount of _____ is enclosed for the above fee(s).
- ☒ The Commissioner is authorized to credit any overpayment and to charge any underpayment to Bingham McCutchen's Deposit Account No. 50-2518, referencing billing No. 18721-7053, for any fees required by the filing of these papers..

Respectfully submitted,
BINGHAM McCUTCHEN LLP

Dated: 3/17/03

By: Gerald Chan
Gerald Chan
Reg. No. 51,541

BINGHAM McCUTCHEN LLP
Three Embarcadero, Suite 1800
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Complete if Known

Application Number	10/037,477
Filing Date	January 2, 2002
First Named Inventor	Yoshihiro Takai, et al.
Art Unit	2882
Examiner Name	Not yet assigned
Attorney Docket No.	270/234; 18721-7053

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number Number – Kind Code ² (if known)	Publication Date MM-DD-YY	Name of Patentee or Application of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher city and/or country where published
	1	Uematsu, Minoru, et al. "Daily Positioning Accuracy of Frameless Stereotactic Radiation Therapy with a Fusion of computed Tomography and Linear Accelerator (Focal) Unit: Evaluation of z-axis with a z-marker"; <i>Radiotherapy and Oncology</i> , Vol. 50, Issue 3, 1 March 1999, Pages 337-339.

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